

Best Practices When Upgrading Hard Drives on exacqVision Servers

The following considerations are for 32-bit Windows-based A-Series systems without a RAID controller:

- Desktop and 2U A-Series systems do not have a separate physical drive for the operating system. This means that we cannot load Windows on anything larger than 2.2TB. By default, Windows 7 loads with an MBR partition table, which has a maximum addressable space of 2.2TB.
- UEFI is not supported for booting with 32-bit versions of Windows.
- The operating system needs its own partition (30-60GB) to use the rest of the drive as storage. If the drive containing the operating system is replaced, you will need to back up your settings and other important information, so plan accordingly.
- Although it is possible to use a storage drive that is larger than 2.2TB with GUID Partition table (GPT), **we do not support mixed-capacity systems.**
- A BIOS upgrade might be required to detect >2TB drives for older systems.

Bottom line: 2TB drives are the maximum supported upgrade for 32-bit Windows-based Desktop and 2U A-Series systems.

The following considerations are for 32-bit Windows-based A-Series and Z-Series systems with a RAID Controller:

- 4U A-Series systems (JBOD or RAID) use a separate boot partition made by the RAID Controller. Windows detects as a separate drive, so MBR may be used and the operating system may be installed here. If the drive containing the operating system is replaced, you will need to back up your settings and other important information, so plan accordingly.
- All Z-Series systems use a separate physical drive for the operating system. We use this separate drive exclusively to install the operating system. This drive should not have to be changed when upgrading the storage drives.
- With JBOD and RAID arrays larger than 2.2TB, GPT must be used to see the entirety of the drive.
- Although it is possible to add larger drives to an existing RAID array, the controller will base the capacity on the drive with the lowest capacity. Even if all drives are replaced with larger capacity drives, the controller will not automatically adjust to the larger size. **You will need to destroy and re-create the RAID array, so plan accordingly.**
- Also, it is possible to mix capacities with JBOD arrays. However, JBOD arrays are not fault-tolerant, and the existing data on the drive will be lost, so plan

accordingly. Of more importance, **we do not support mixed-capacity systems.**

- A BIOS upgrade and/or controller firmware update might be required to detect >2TB drives for older systems.

Bottom line: 6TB drives are the maximum supported upgrade for 32-bit Windows-based 4U-Series and all Z-Series systems.

The following considerations are for 64-bit Windows-based A-Series and Z-Series systems:

- We use UEFI partitions and GPT with 64-bit Windows-based systems. This eliminates the 2.2TB limit of MBR partitioning on the operating system drive.
- However, if the drive containing the operating system is replaced, you will need to back up your settings and other important information, so plan accordingly.
- Although it is possible to add larger drives to an existing RAID array, the controller will base the capacity on the drive with the lowest capacity. Even if all drives are replaced with larger capacity drives, the controller will not automatically adjust to the larger size. **You will need to destroy and re-create the RAID array, so plan accordingly.**
- Also, it is possible to mix capacities with JBOD arrays or single drive systems. However, JBOD arrays are not fault-tolerant, and the existing data on the drive will be lost, so plan accordingly. Of more importance, **we do not support mixed capacity systems.**

Bottom line: 6TB drives are the maximum supported upgrade for all 64-bit Windows-based systems.

The following considerations are for Linux-based LC, EL, ELS, ELX, ELP, A-Series, and Z-Series systems:

- All Linux systems use a separate physical drive for the operating system (except for LC, as explained below).
- We use either ext3 or ext4 file systems (depending upon the Linux version). In either case, we use a maximum single drive size of 16TB. For systems that have more (RAID systems), the drives must be split up into smaller, equal partitions. Using the diskprep.sh script will achieve this split automatically.
- Although it is possible to add larger drives to an existing RAID array, the controller will base the capacity on the drive with the lowest capacity. Even if all drives are replaced with larger capacity drives, the controller will not automatically adjust to the larger size. **You will need to destroy and re-create the RAID array, so plan accordingly.**

- Also, it is possible to mix capacities with JBOD arrays or single drive systems. However, JBOD arrays and single drive systems are not fault-tolerant, and the existing data on the drive will be lost, so plan accordingly. Of more importance, **we do not support mixed capacity systems.**
- **LC systems:** LC systems do not have a separate boot drive. Before you upgrade the drive, back up the configuration and any other important information. Additionally, the data on the drive will be lost, so plan accordingly. The LC recovery image accounts for the single-drive setup, but it should not be used with other types of systems. LC also uses a different drive model than the other models.
- A BIOS upgrade might be required to detect >2TB drives for older systems.

Bottom line: 6TB drives are the maximum supported upgrade for all Linux systems if **all drives are replaced at the same capacity.**

A note about drive speed:

- Based on the age of the system, either the RAID controller or the SATA port on the motherboard may only support hard drives at 3 GB/s (SATA II). While this does not limit the motherboard from potentially detecting the larger drive, it will reduce its performance as new drives purchased from exacqVision will be 6 Gb/s (SATA III) drives.
- Some motherboards do not have SATA III connectors, some only have two to four. Older RAID controllers only support SATA II speeds on drives.
- For assistance on determining which motherboard you have and which connector to use, please contact Technical Support with your system's serial number (number beginning with ER).